

# ***Interactive comment on “European anthropogenic AFOLU emissions and their uncertainties: a review and benchmark data” by Ana Maria Roxana Petrescu et al.***

## **Anonymous Referee #1**

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The manuscript and the data, if published, will be very useful, in particular, for modelers who need a benchmark for assessing the performance of their models. The authors present a collection of data on greenhouse gas (GHG) emissions in the AFOLU from the EU countries' submissions to the UNFCCC, FAOSTAT, and, that is more valuable, different models. The authors provide an overview of the emissions by GHG and activity, and shortly describe the methods and models used for obtaining the emission estimates. The uncertainties are presented only for the UNFCCC data and EDGAR. All the figures in the manuscript are complemented with respective datasets in Excel tables. The manuscript is well written as an overview, however, the data are not well structured and described (the data are provided only as a support for the figures in

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the manuscript, there is no detailed emission data for all activities, or I didn't find the main file with all the data. . .). It is difficult to understand the data without reading the manuscript. The authors did not describe how they found the data from the models and what criteria were used for selecting the models (which search websites, what keywords, publication timeframe, journals, etc.). I'd avoid using the word "benchmark" in the title, I agree, it's a good collection of the data of different origin, but I'm not convinced by the manuscript that it's a benchmark. Since the uncertainties are presented only for two data sources, I'd avoid using the word "uncertainties" in the title as well. From a publication with such title I expect, except the review, a dataset with all the data grouped by activity, GHG, sources with the best possible time and geospatial resolution; with a section (or annex) devoted to the description of the dataset. In addition, the data should be better explained in the excel table, e.g. using comments or notes. Specific comments are presented below. Line 76: some countries use different base year than 1990, e.g., Hungary. Line 77: what is year-2? Lines 150-155: Please explain better how did you search for the data, i.e., which search websites, what keywords, selection criteria etc. Table 1: Please improve the table for easier distinguishing the rows describing the GHGs. Lines 420-425: Please try to use the same units (either Tg or kton). Line 450: "the" at the beginning of the line is redundant. Figure 13: I didn't find the respective data in the Excel files. Footnote 6 on p.37: "...between then UNFCCC..." to be changed to "...between the UNFCCC...". Table B2: Please explain UAD and UEF, which confidence interval? Lines 980-990/ 1035-1045/ 1050-1060 / 1065-1075 / 1080-1090: Please include information on the timestep of the models.

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-199>, 2019.

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